High Temperature Capacitors for Venus Exploration, Phase II

Completed Technology Project (2006 - 2008)

Project Introduction

In this SBIR program, TRS Technologies has developed several new dielectrics for high temperature applications including signal conditioning, filtering and energy storage, and high-power RF. Feasibility was demonstrated by constructing prototype multilayer ceramic capacitors (MLCCs) with capacitance values in the 80 to 100nF range @ 450

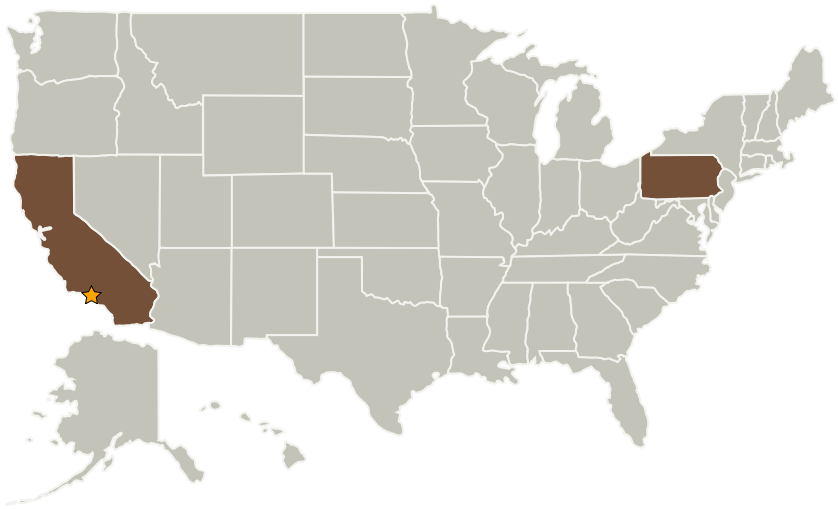
o

C and voltage handling capability of at least 250V. In particular, high dielectric constant (5,000 to 30,000), moderate loss (2-6%) capacitors were demonstrated with voltage handling capabilities of over 250V; and low dielectric constant (30-100), low loss (<<1%) capacitors were demonstrated with voltage handling capabilities of over 1000V that were capable of working from <30K to over 500

o

C while maintaining ca. ±14% of the room temperature capacitance.

Primary U.S. Work Locations and Key Partners



High Temperature Capacitors for Venus Exploration, Phase II

Table of Contents

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

High Temperature Capacitors for Venus Exploration, Phase II

Completed Technology Project (2006 - 2008)

Organizations Performing Work	Role	Type	Location
★Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California
TRS Ceramics, Inc.	Supporting Organization	Industry	State College, Pennsylvania

Primary U.S. Work Locations	
California	Pennsylvania

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX03 Aerospace Power and Energy Storage
  - TX03.3 Power Management and Distribution
    - TX03.3.2 Distribution and Transmission